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Concept 1: Geometric Properties

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
	PO 1. Use the								
	words vertex								
	and side when								
	describing								
	simple two-								
	dimensional								
	geometric								
	shapes.								
PO 1. Identify	PO 2. Identify								
two-	two-								
dimensional	dimensional								
shapes by	shapes by								
attribute (size,	attribute (size,								
shape, number	shape, number								
of sides).	of sides,								
	vertices).								
PO 2. Identify	PO 3. Use								
concepts and	concepts and								
terms of	terms of								
position and	position and								
size in	size in								
contextual	contextual								
situations:	situations:								
• Inside/	• Inside/outside								
outside	• Left/right								
 Above/below 	 Above/below/ 								
/between	between								
• Smaller/	Smaller/larger								
larger	• Longer/								
• Longer/	shorter.								
shorter.									

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Concept 1: Geometric Properties

Analyze the attributes and properties of two and three dimensional shapes and develop mathematical arguments about their relationships.

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
PO 3.	PO 4. Name	PO 1. Compare	PO 1. Build	PO 1. Identify	PO 1.	PO 1. Classify			PO 1.
Identify	common two-	attributes of	geometric	the properties	Recognize	polygons by their			Identify the
shapes in	dimensional	two-dimensional	figures with	of two-	regular	attributes. (e.g.,			attributes of
different	shapes	shapes (square,	other	dimensional	polygons.	number of sides,			special
environments.	(square,	rectangle,	common	figures using		length of sides,			triangles.
(e.g., nature, buildings,	rectangle,	triangle, and circle).	shapes. (e.g.,	appropriate terminology.		angles, parallelism,			(isosceles, equilateral,
classroom,	triangle, and circle).	circle).	tangrams, pattern	terminology.		perpendicularity)			right)
etc.)	chele).		blocks,			perpendicularity)			night)
<i>C.C.</i>)			geoboards)						
			8						
	PO 5. Draw				PO 2. Draw	PO 2. Draw a	PO 1. Draw a	PO 1. Draw a	PO 2.
	two-				two-	geometric figure	geometric	modelthat	Identify the
	dimensional				dimensional figures by	showing specified	figure showing	demonstrates basic	hierarchy of quadrilaterals.
	shapes. (square,				applying	properties, such	specified	geometric	quadriiaterais.
	rectangle,				significant	as parallelism	properties.	relationships	
	triangle,				properties of	and	(e.g., Draw an	such as	
	circle)				each. (e.g.,	perpendicularity.	obtuse	parallelism,	
	,				Draw a		triangle.)	perpendicu-	
					quadrilateral		_	larity,	
					with two sets			similarity/	
					of parallel			proportionality,	
					sides and four			and	
					right angles.)			congruence.	

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Concept 1: Geometric Properties

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
			PO 2. Name concrete objects and pictures of three-dimensional solids (cones, spheres and cubes).	PO 2. Identify models or illustrations of prisms, pyramids, cones, cylinders and spheres.	PO 3. Sketch prisms, pyramids, cones, and cylinders.	PO 3. Classify prisms, pyramids, cones, and cylinders by base shape and lateral surface shape.			
					PO 4. Identify the properties of two- and three-dimensional geometric figures using appropriate terminology and vocabulary.	PO 4. Classify three- dimensional figures by their attributes.	PO 2. Classify three- dimensional solids by their configuration and properties. (e.g., parallelism, perpendicu- larity and congruency)	PO 2. Draw three- dimensional figures by applying properties of each. (e.g., parallelism, perpendicu- larity and congruency)	

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Concept 1: Geometric Properties

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
			PO 3.			PO 5. Compare	PO 3. Identify	PO 3.	PO 3.
			Describe			attributes of	the net (two-	Recognize	Make a net
			relationships			two-	dimensional	the three-	to represent
			between two-			dimensional	representation)	dimensional	a three-
			dimensional			figures with	that	figure	dimensional
			and three-			three-	corresponds to	represented	object.
			dimensional			dimensional	a rectangular	by a net.	
			objects.			figures.	prism, cone, or		
			(squares/				cylinder.		
			cubes, circles/						
			spheres, triangles/						
			cones)						
			conesy						
							PO 4.	PO 4.	PO 4. Make
							Distinguish	Represent the	a three-
							between	surface area	dimensional
							length, area,	of rectangular	model from
							and volume,	prisms and	a net.
							using two-	cylinders as	
							and three-	the area of	
							dimensional	their net.	
							geometric		
							figures.		

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Concept 1: Geometric Properties

points, lines, line segments (open or closed endpoints), any or angles. (e.g., right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 8. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 1. Classify triangles as right, acute, or obtuse. PO 1. Classify triangles as right, acute, or obtuse. PO 2. Classify triangles as right, acute, or obtuse. PO 3. Classify triangles as right, acute, or obtuse. PO 3. Classify triangles as right, acute, or obtuse. PO 4. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 6. Recognize the relationship between central angles and intercepted intercept	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
line segments (open or closed endpoints), rays or angles. PO 4. Classify angles. (e.g., right, acute, obtuse, straight) PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 8. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse. PO 9. Classify triangles as right, acute, or obtuse.					PO 3. Draw	PO 5. Draw	PO 6. Draw	PO 5. Draw	PO 5. Draw	PO 5. Draw
Classify angles (e.g., right, acute, obtuse, straight) PO 5. PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 5. PO 7. Classify triangles as right, acute, or obtuse. PO 6. PO 7. Description of the properties of th					points, lines,	points, lines	\mathbf{c}	polygons with	regular	
closed endpoints), rays or angles. labels. PO 4. Classify angles. (e.g., right, acute, obtuse, straight) PO 5. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right acute, or obtuse. PO 7. Classify triangles as right acute, or obtuse. PO 7. Classify triangles as right acute, or obtuse. PO 7. Classify triangles as right acute, or obtuse. PO 7. Classify triangles and intercepted										
endpoints), rays or angles. PO 4. Classify angles. (e.g., right, acute, obtuse, straight) PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 7. Identify supplementary or of vertical angles. PO 7. Identify supplementary or complementary angles. PO 6. Identify the angles created by two lines and a transversal. Identify the angles created by the supplementary angles. PO 6. Identify the angles created by two lines and a transversal. Identify the angles created by a transversal intersecting two parallel lines (e.g., corresponding angles are congruent). PO 7. Recognize the relationship between siosceles, or equilateral. PO 7. PO 7. Recognize the relationship between central angles and intercepted intercepted intercepted intercepted intercepted intercepted angles, and intercepted intercepted angles, and and intercepted angles, and and intercepted angles, and appropriate labels.					· *		labels.	labels.		
rays or angles. PO 4. Classify angles (e.g., right, acute, obtuse, straight) PO 5. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Recognize the relationship between central angles and angles and angles and intercepted intercepted intercepted intercepted angles, and a						•			labels.	
angles. labels. PO 4. Classify angles. (e.g., right, acute, obtuse, straight) PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 6. Recognize that all pairs of vertical angles. Recognize that all pairs of vertical angles. Recognize that all pairs of vertical angles. Recognize the relationship between central angles and a ginges are congruent. PO 7. Classify triangles as right, acute, or obtuse. Recognize the relationship between central angles and an angles and a transversal intersecting two parallel lines (e.g., corresponding angles are congruent). PO 7. Recognize the relationship between central angles and and angles and angles and and angle and and and angle and and and a										
PO 4. Classify angles, (e.g., right, acute, obtuse, straight) PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 6. Supplementary angles readed by two lines and a transversal. Iterative that all pairs of vertical angles. PO 6. Supplementary angles created by two lines and a transversal intersecting two parallel lines (e.g., corresponding angles are congruent). PO 5. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or equilateral.					•					
Classify angles. (e.g., right, acute, obtuse, straight) PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 6. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as read and a transversal. PO 7. Classify triangles as reand a angles and intersecting transversal transversal. PO 7. Classify triangles as reand a transversal. PO 7. Recognize the relationship between central angles and intercepted intersecting transversal. PO 7. Classify triangles as reand a transversal. PO 7. Classify triangles as reand a transversal. PO 7. Recognize the relationship between centra					angles.	labels.				labels.
angles. (e.g., right, acute, obtuse, straight) PO 5. Classify triangles as right, acute, or obtuse. or obtuse. or obtuse. PO 5. Classify triangles as right, acute, or obtuse. or obtuse. or obtuse. PO 5. Classify triangles as right, acute, or obtuse. or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 6. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or equilateral. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or equilateral. PO 7. Classify triangles as right, acute, or equilateral. PO 7. Classify triangles as right, acute, or equilateral. PO 7. Classify triangles as right, acute, or equilateral. PO 7. Classify triangles as right, acute, or equilateral. PO 7. Classify triangles as right, acute, or equilateral. PO 7. Classify triangles as right, acute, or equilateral. PO 7. Classify triangles as recongruent. PO 7. Classify triangles as recongruent. PO 7. Recognize the relationship between central angles inscribed angles and intercepted intercepted intercepted intercepted angles, and intercepted intercepted angles, and intercepted in	-				PO 4.	PO 6.	PO 7. Identify	PO 6.	PO 6.	PO 6. Solve
right, acute, obtuse, straight) PO 5. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 6. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as rocongruent. PO 7. Classify triangles as rocongruent transversal. PO 7. Classify triangles as rocongruent transversal. PO 7. Classify triangles as rocongruent transversal. PO 7. Classify triangles as rocongruent. PO 7. Recognize the relationship between central angles inscribed inscribed and angles and intercepted intercepted intercepted intercepted angles, and					Classify	Recognize	supplementary	Identify the	Identify the	problems
obtuse, straight) PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as right, acute, or obtuse. PO 7. Classify triangles as reaton tary, or congruent intersecting two parallel lines (e.g., congruent). PO 7. Recognize the relationship between relationship between congruent. PO 7. Recognize the relationship between congruent angles and intercepted intercept					angles. (e.g.,	that all pairs	or	angles created	properties of	related to
straight) straight) congruent. transversal. transversal. transversal. transversal. supplementary, or congruent angles are congruent). PO 5. Classify triangles as right, acute, or obtuse. Straight) transversal. transversal. transversal. transversal. supplementary, or congruent PO 7. Recognize the relationship relationship between or obtuse. isosceles, or equilateral. supplementary, or congruent angles are congruent. PO 7. Recognize the relationship between inscribed and angles and circles, angles, and intercepted intercepted intercepted						of vertical	complementary	•	•	complemen-
PO 5. Classify triangles as right, acute, or obtuse. PO 5. Classify triangles as right, acute, or obtuse. Congruent angle concepts. Intersecting two parallel lines (e.g., corresponding angles are congruent). PO 7. PO 7. Recognize the relationship between between sisosceles, or equilateral. PO 7. Recognize the relationship between between inscribed intercepted intercepted intercepted intercepted tary, or congruent angle concepts. PO 7. Po					· ·	angles are	angles.	and a	-	
two parallel lines (e.g., corresponding angles are congruent). PO 5. PO 7. PO 7. PO 7. PO 7. Recognize the triangles as right, acute, or obtuse. PO 5. Scalene, isosceles, or equilateral. PO 5. PO 7. PO 7. Recognize the relationship between inscribed and angles and intercepted intercepted intercepted concepts.					straight)	congruent.		transversal.		
PO 5. PO 7. PO 7. PO 7. Classify triangles as right, acute, or obtuse. PO 5. scalene, or obtuse. PO 5. corresponding angles are congruent). PO 7. PO 7. PO 7. PO 7. PO 7. Recognize the relationship relationship between between inscribed intercepted intercepted intercepted angles, and									C	-
PO 5. PO 7. PO 7. PO 7. Recognize the triangles as right, acute, or obtuse. PO 5. Solve problems by triangles as right, acute, or obtuse. PO 5. PO 7. PO 7. Recognize the triangles as relationship between between central angles inscribed and angles and intercepted intercepted intercepted concepts. PO 7. PO 7. Recognize the problems by relationship between relationship between inscribed and angles and circles, and intercepted intercepted angles, and										
PO 5. PO 7. PO 7. Recognize the triangles as right, acute, or obtuse. PO 5. PO 7. PO 7. Recognize the triangles as right, acute, or obtuse. PO 5. PO 7. Recognize the relationship between between between central angles inscribed intercepted intercepted intercepted intercepted angles, and										-
PO 5. PO 7. PO 7. Recognize the relationship triangles as right, acute, or obtuse. PO 5. isosceles, or equilateral. PO 5. PO 7. Solve problems by relationship triangles as relationship between triangles inscribed between triangles and circles, and intercepted intercepted angles, and										concepts.
PO 5. Classify Classify Triangles as right, acute, or obtuse. PO 7. PO 7. Recognize the relationship between or obtuse. PO 7. Recognize the relationship between between or obtuse. PO 7. PO 7. Solve problems by applying the relationship between central angles inscribed and angles and circles, intercepted intercepted intercepted angles, and									•	
Classify triangles as right, acute, or obtuse. Classify triangles as right, acute, or obtuse. Classify triangles as relationship between or obtuse. Classify triangles as scalene, isosceles, or equilateral. Classify triangles as relationship between central angles inscribed and angles and circles, intercepted intercepted intercepted angles, and					PO 5	PO 7		PO 7		PO 7 Solve
triangles as right, acute, or obtuse. triangles as scalene, isosceles, or equilateral. triangles as relationship between central angles inscribed and angles and circles, intercepted intercepted intercepted angles, and										
right, acute, or obtuse. right, acute, or obtuse. scalene, isosceles, or equilateral. relationship between central angles and angles and circles, intercepted intercepted intercepted angles, and						•		_		¥
or obtuse. isosceles, or equilateral. isosceles, or equilateral. intercepted i										
equilateral. and angles and circles, intercepted intercepted angles, and						· ·				
intercepted intercepted angles, and						·		•		
						1			•	
								*	arcs.	intercepted
arcs.										•

Every student should understand and use all concepts and skills from the previous grade levels. The standards are designed so that new learning builds on preceding skills and are needed to learn new skills. Communication, Problem-solving, Reasoning & Proof, Connections, and Representation are the process standards that are embedded throughout the teaching and learning of mathematical strands.

Concept 1: Geometric Properties

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
					PO 8. Recognize that a circle is a 360° rotation about a point.				
					PO 9. Identify the diameter, radius and circumference of a circle.	PO 8. Identify the diameter, radius and circumference of a circle or sphere.	PO 8. Identify arcs and chords of a circle.	PO 8. Identify tangents and secants of a circle.	PO 8. Solve problems by applying the relationship between radii, diameters, chords, tangents or secants.
					PO 10. Understand that the sum of the angles of a triangle is 180°.		PO 9. Model the triangle inequality theorem using manipulatives.	PO 9. Determine whether three given lengths can form a triangle.	PO 9. Solve problems using the triangle inequality property.

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Concept 1: Geometric Properties

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
									PO 10.
									Solve
									problems
									using special
									case right
									triangles.
		PO 2. Recognize		PO 6.	PO 11. Draw		PO 10.		PO 11.
		congruent		Identify	two		Identify		Determine
		shapes.		congruent	congruent		corresponding		when
				geometric	geometric		parts of		triangles are
				shapes.	figures.		congruent		congruent by
							polygons as		applying
							congruent.		SSS, ASA,
									AAS or
									SAS.
			PO 4.	PO 7. Identify	PO 12. Draw			PO 10.	PO 12.
			Recognize	similar	two similar			Identify	Determine
			similar	shapes.	geometric			corresponding	when
			shapes.		figures.			angles of	triangles are
								similar	similar by
								polygons as	applying
								congruent and	SAS, SSS,
								sides as	or AA
								proportional.	similarity
									postulates.
									PO 13.
									Construct a
									triangle
									congruent to
									a given
									triangle.

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Concept 1: Geometric Properties

Analyze the attributes and properties of two and three dimensional shapes and develop mathematical arguments about their relationships.

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
	PO 6.	PO 3. Recognize	PO 5.	PO 8. Draw a	PO 13.	PO 9. Draw a			PO 14. Solve
	Recognize	line(s) of	Identify a line	two-	Identify the	two-			contextual
	where a line	symmetry for a	of symmetry	dimensional	lines of	dimensional			situations
	of symmetry	two-dimensional	in a two-	shape that has	symmetry in	shape with a			using angle
	divides a two-	shape.	dimensional	line	a two-	given number			and side
	dimensional		shape.	symmetry.	dimensional	of lines of			length
	shape into				shape.	symmetry.			relationships.
	mirror images.								

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Concept 2: Transformation of Shapes

Apply spatial reasoning to create transformations and use symmetry to analyze mathematical situations.

_	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
	PO 1.	PO 1.	PO 1.	PO 1.	PO 1.	PO 1. Identify	PO 1. Identify	PO 1.	PO 1. Sketch
	Recognize	Recognize	Recognize	Demonstrate	Demonstrate	reflections,	rotations	Identify the	the planar
	same shape in	same shape in	same shape in	translation	reflections	and	about a point,	planar	figure that is
	different	different	different	using	using	translations	using	geometric	the result of
	positions	positions	positions	geometric	geometric	using	pictorial	figure that is	two or more
	(slide/	(flip/reflection).	(turn/rotation).	figures.	figures.	pictures.	models.	the result of a	transformations.
	translations).							given rigid	
								transformation.	
				PO 2.	PO 2.	PO 2.	PO 2.	PO 2. Model a	PO 2. Identify
				Identify a	Describe the	Perform	Recognize	simple	the properties
				tessellation.	transformations	elementary	simple single	transformation	of the planar
					that created a	transformations	rotations,	on a coordinate	C
					tessellation.	to create a	translations	grid. (e.g.	the result of
						tessellation.	or reflections	translate right	two or more
							on a	four units and	transformations.
							coordinate	down two	
							grid.	units)	
									DO 2
									PO 3.
									Determine the
									new coordinates of
									a point when a
									single transformation
									is performed
									on a planar
									geometric
									figure.
									iiguic.

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Concept 2: Transformation of Shapes

Apply spatial reasoning to create transformations and use symmetry to analyze mathematical situations.

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
									PO 4.
									Determine
									whether a
									given pair of
									figures on a
									coordinate
									plane
									represents a
									translation,
									reflection,
									rotation, or
									dilation.
									PO 5. Classify
									transformations
									based on
									whether they
									produce
									congruent or
									similar figures.
									PO 6.
									Determine the
									effects of a
									single
									transformation
									on linear or
									area
									measurements
									of a planar
									geometric
									figure.

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Concept 3: Coordinate Geometry

Specify and describe spatial relationships using coordinate geometry and other representational systems.

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
			PO 1.	PO 1. Name	PO 1. Graph	PO 1. Graph	PO 1. Graph	PO 1. Use a	PO 1. Graph
			Identify	the	points in the	a polygon in	data points in	table of	a quadratic
			points in the	coordinates of	first quadrant	the first	(x, y) form in	values to	equation with
			first quadrant	a point	on a grid	quadrant	any quadrant	graph a linear	lead
			of a grid	plotted in the	using ordered	using ordered	of a	equation.	coefficient
			using ordered	first quadrant.	pairs.	pairs.	coordinate		equal to one.
			pairs.				grid.		
						PO 2. State	PO 2. State		PO 2. Graph
						the missing	the missing		a linear
						coordinate of	coordinate of		equation in
						a given figure	a given figure		two variables.
						in the first	in any		
						quadrant of a	quadrant of a		
						coordinate	coordinate		
						grid using	grid using		
						geometric	geometric		
						properties.	properties.		
						(e.g. find the	(e.g. find the		
						coordinates of	coordinates of		
						the missing vertex of a	the missing vertex of a		
						rectangle	rectangle		
						when two	when two		
						adjacent sides	adjacent sides		
						are drawn)	are drawn)		
						arc drawn)	arc drawn)		
									PO 3. Graph
									a linear
									inequality in
									two variables.

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Concept 3: Coordinate Geometry

Specify and describe spatial relationships using coordinate geometry and other representational systems.

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
									PO 4.
									Determine the
									solution to a
									system of
									equations in
									two variables
									from a given
									graph.
								PO 2.	PO 5.
								Determine	Determine the
								the midpoint	midpoint
								given two	between two
								points on a	points in a
								number line.	coordinate
									system.
									PO 6.
									Determine
									changes in the
									graph of a
									linear function
									when constants
									and coefficients
									in its equation
			1					PO 3.	are varied. PO 7.
								Determine the	Determine
								distance	the distance
									between two
								between two	
								points on a number line.	points in the coordinate
								number mie.	
									system.

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Concept 4: Measurement - Units of Measure

- Geometric Objects

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
PO 1.	PO 1.	PO 1. Identify							
Verbally	Compare the	the type of							
compare	measurable	measure							
objects	characteristic	(e.g., weight,							
according to	s of two	height, and							
observable	objects.	time)							
and	(e.g., length	for each							
measurable	weight, and	attribute of an							
attributes.	size)	object.							
PO 2.	PO 2. Select	PO 2. Select	PO 1. Select	PO 1.	PO 1. State	PO 1.	PO 1. Identify		
Communicate	the	the	the	Identify the	an	Determine	the		
orally how	appropriate	appropriate	appropriate	appropriate	appropriate	the	appropriate		
different	measure of	U.S.	measure of	measure of	measure of	appropriate	unit of		
attributes of	accuracy -	customary	accuracy -	accuracy for	accuracy -	measure of	measure for		
an object can	• length –	measure of	length −	the area of an	for a	accuracy -	the volume of		
be measured.	inches, feet	accuracy -	centimeters,	object.	contextual	within a	an object.		
	• capacity/		meters;	(e.g., sq. ft. or	situation	system for a	(e.g., cubic		
	volume – cups,	• length –	kilometers	sq. miles)	(e.g., "What	given	inches or		
	gallons	inches, feet,	• capacity/		unit of	contextual	cubic cm)		
	• mass/weight	yards, miles	volume –		measurement	situation. (e.g.			
	– pounds.	• capacity/vo	liters		would you	would you			
	P · · · · · · · ·	lume – pints,	 mass/weight 		use to	measure the			
		quarts	– grams.		measure the	length of your			
		• mass/weight	S		top of your	bedroom wall			
		– ounces.			desk?")	using inches			
						or feet)			
l									

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Concept 4: Measurement - Units of Measure

- Geometric Objects

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
	PO 3. Tell	PO 3. Tell	PO 2. Tell						
	time to the	time to the	time with						
	hour using	quarter hour	one-minute						
	analog and	using analog	precision						
	digital clocks.	and digital	(analog).						
		clocks.							
	PO 4. Name	PO 4.	PO 3.	PO 2.					
	the days of	Determine the	Determine the	Compute					
	the week for	passage of	passage of	elapsed time					
	yesterday,	time using	time across	using a clock					
	today and	units of days	months (i.e.,	(e.g., hours					
	tomorrow.	and weeks	units of days,	and minutes					
	(e.g., If today	within a	weeks,	since or					
	is	month using a	months) using	until) or a					
	Wednesday,	calendar.	a calendar	calendar (e.g.,					
	what day will			days, weeks,					
	it be			years since or					
	tomorrow?)			until).					
	PO 5. Name								
	the 12 months								
	of the year in								
	proper order								
	starting with								
	January.								
	PO 6. Name								
	the 7 days of								
	the week in								
	proper order								
	starting with								
	Sunday.								ļ

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Concept 4: Measurement - Units of Measure

- Geometric Objects

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
		PO 5. Select		PO 3. Select		PO 2.			
		the appropriate		an appropriate		Determine the			
		tool to		tool to use in a		appropriate tool			
		measure the		particular		needed to			
		given		measurement		measure to the			
		characteristic		situation.		needed			
		of an object.				accuracy.			
	PO 7. Measure		PO 4. Measure	PO 4.	PO 2. Draw	PO 3.	PO 2.		
	a given object	a given object	•	Approximate	two-	Determine a	Measure to		
	using the	using the	using the	measurements	dimensional	linear	the		
	appropriate unit		appropriate unit		figures to	measurement	appropriate		
	of measure -	unit of	of measure -	appropriate	specifications	to the	degree of		
	• length –	measure-	• length –	degree of	using the	appropriate	accuracy.		
	inches, feet and	length −	centimeters,	accuracy.	appropriate	degree of			
	yards	inches, miles	millimeters,		tools. (e.g.,	accuracy.			
	• capacity/vol	• capacity/vol	meters,		draw a circle				
	ume – cups,	ume – pints,	kilometers		with a 2 inch				
	gallons	quarts	• capacity/vol		radius)				
	• mass/weight -	mass/weight	ume – liters						
	pounds.	– ounces.	mass/weight –						
			grams.			DO 4			
			PO 5. Record			PO 4.			
			temperatures			Measure			
			to the nearest			angles using a			
			degree in			protractor.			
			degrees						
			Fahrenheit and						
			degrees Celsius as						
			shown on a						
			thermometer.						

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Concept 4: Measurement - Units of Measure

- Geometric Objects

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
			PO 6.	PO 5.					
			Compare	Compare					
			units of	units of					
			measure to	measure to					
			determine	determine					
			more or less	more or less					
			relationships	relationships					
			for -	including -					
			• length – inches to feet; centimeters to meters; • time –	meters and kilometers and • weight -					
			minutes to hours; hours to days; days to weeks; months to years; and money – pennies, nickels, dimes, quarters and dollars.	pounds and tons, grams and kilograms.					

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Concept 4: Measurement - Units of Measure

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Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
PO 3. Order		PO 7. State	PO 7.	PO 6. State	PO 3.				
objects		equivalent	Determine	equivalent	Determine				
according to		relationships:	relationships	relationships.	relationships				
observable		• 12 inches =	for -	(e.g., 3	including				
and		1 foot	• volume –	teaspoons =	volume (e.g.,				
measurable		• 60 minutes	cups and	1	pints and				
attributes.		= 1 hour	gallons,	Tablespoon,	quarts,				
		• 24 hours	• weight –	16 cups = 1	milliliters and				
		= 1 day	ounces and	gallon, 2000	liters).				
		• 7 days	pounds, and	pounds = 1					
		= 1 week	money –	ton)					
		• 12 months	extend to						
		= 1 year	amounts						
		• 100 pennies	greater than						
		= 1 dollar	one dollar.						
		• 10 dimes							
		= 1 dollar							
		• 4 quarters							
		= 1 dollar.							
		- 1 donar.	PO 8.	PO 7.	PO 4. Convert	PO 5. Convert	PO 3.		
			Compare the	Compare the	measurement	within a	Convert a		
			length of two	weight of	units to	single	measurement		
			objects using	two objects	equivalent units	measurement	from US		
			U.S.	using both	within a given	system (US	customary to		
			customary or	U.S.	system (U.S.	customary or	metric, and		
			metric units.	customary	customary and	metric). (e.g.	vice versa.		
				and metric	metric). (e.g., 12	how many			
				units.	inches = 1 foot,	ounces are			
					10 decimeters =	equivalent to			
					1 meter)	2 pounds?)			

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Concept 4: Measurement - Units of Measure

- Geometric Objects

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
			PO 9. Determine the perimeter using a rectangular array.	PO 8. Determine perimeter of simple polygons. (e.g. square, rectangle, triangle)	PO 5. Solve problems involving perimeter of convex polygons.	PO 6. Solve problems involving the perimeter of polygons.	PO 4. Solve problems involving the circumference of a circle.		
						PO 7. Determine the area of triangles.			
			PO 10. Represent area using a rectangular array.	PO 9. Determine area of squares and rectangles.	PO 6. Determine the area of figures composed of two or more rectangles on a grid.	PO 8. Distinguish between the perimeter and area in contextual situation.	PO 5. Solve problems involving the area of a circle.		
					PO 7. Solve problems involving area of simple polygons.	PO 9. Solve problems for the areas of parallelograms (includes rectangles).	PO 6. Solve problems for the areas of parallelograms, triangles, and circles.	PO 1. Solve problems for the area of a trapezoid.	PO 1. Calculate the area of geometric shapes composed of two or more geometric figures.

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Concept 4: Measurement - Units of Measure

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Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
								PO 2. Solve	PO 2.
								problems	Calculate the
								involving the	volumes of
								volume of	three-
								rectangular	dimensional
								prisms and	geometric
								cylinders.	figures.
								PO 3.	PO 3.
								Calculate the	Calculate the
								surface area	surface areas
								of rectangular	of three-
								prisms or	dimensional
								cylinders.	geometric
									figures.
				PO 10.	PO 8.	PO 10.	PO 7. Identify	PO 4.	PO 4.
				Differentiate	Describe the	Identify	polygons	Identify	Compare
				between	change in	parallelograms	having the	rectangular	perimeter,
				perimeter and	perimeter or	having the	same	prisms and	area, or
				area of	area when	same	perimeter or	cylinders	volume of
				quadrilaterals.	one attribute	perimeter or	area.	having the	figures when
				quadrinaterais.	(length,	area.	arca.	same volume.	dimensions
					width) of a			same voidine.	are changed.
					rectangle is				ure enumber.
					altered.				
									PO 5. Find
									the length of
									a circular arc.

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Concept 4: Measurement - Units of Measure

- Geometric Objects

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
									PO 6. Find
									the area of a
									sector of a
									circle.
									PO 7. Solve
									for missing
									measures in a
									pyramid.
									(i.e., slant
									height,
									height)
								PO 5. Find	PO 8. Find
								the measure of	
								a missing	interior and
								interior angle	exterior angles
								in a triangle or	of a polygon.
						DO 11	DO 0 G	quadrilateral.	DO 0 G 1
						PO 11.	PO 8. Compare estimated to	PO 6. Solve	PO 9. Solve scale factor
						Determine the actual measure	actual lengths	problems using ratios and	problems using
						of objects using	based on scale	proportions,	ratios and
						a scale drawing	drawings or	given the scale	proportions.
						or map.	maps.	factor.	
						•		PO 7. Calculate	PO 10. Solve
								the length of a	
								side given two	problems
								similar	using similar
								triangles.	triangles.

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